INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Design Memorandum No. 12-07
Technical Advisory

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TO: All Design, Operations, and District Personnel, and Consultants

FROM: */s/ David H. Boruff*
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SUBJECT: Portable Changeable Message Sign

REVISES: *Indiana Design Manual* Section 83-2.06

EFFECTIVE: September 12, 2012, Letting

A portable changeable message sign (PCMS) is effective in communicating construction-zone information to the general public. Its use in a project shall be as outlined in the *INDOT Guidelines for Portable Changeable Message Signs*. The *Guidelines* appear on the Department website, at http://www.in.gov/dot/div/contracts/design/PCMS.pdf.

A. Need

A PCMS should be considered for each project which includes the following:

1. intermittent or short term, road, lane, or ramp closure;
2. frequent changes in traffic patterns;
3. at least one road with traffic volume that will be at or over capacity during construction; or
4. other project as deemed necessary by the following:
    a. the district office;
    b. the Construction Management Division; or

c.   the Traffic Management and District Support Business Unit.

A PCMS should not be used to convey a message that can be effectively conveyed with static signing.

The need for a PCMS and the selection of messages should be considered during the course of Maintenance of Traffic (MOT) Plan development.

In developing the MOT Plan, the designer should determine the answers to the questions as follows.

1.   What type of closures or restrictions does the MOT Plan generate?
2.   How long will the closures or restrictions be in effect?
3.   Will potentially hazardous conditions exist, such as narrow lane widths, or workers, equipment, or materials encroaching onto the travel lanes? If so, for how long?
4.   Is queuing or delay likely to occur as a result of the MOT Plan?
5.   Will a work zone speed limit that is at least 15 mph lower than the permanent posted speed be enacted?
6.   What is the crash history of the project location?

Conferring with the district Construction and Traffic offices will provide insights to these issues. With this information, the *Guidelines* can be applied to determine whether a PCMS should be included, and, if so, what messages should be displayed.

B. Design Considerations

The *MUTCD* provides the design and application criteria relative to a PCMS. The designer should also consider the following in specifying a PCMS.

1.   Display. The display should provide not more than the maximum amount of information that can be read and comprehended by the motorist at a quick glance, i.e., no rolling messages. A PCMS is capable of displaying three lines of eight characters each. There should be not more than two messages phased in order to provide readability and comprehension. Each message phase should be able to stand alone. For more than two messages, two signs should be used.

2.   Location. The sign should be visible from 2500 ft under ideal day and night conditions. The first message should be legible at a minimum distance of 650 ft from each lane. A PCMS is typically placed in advance of other advance warning signs.   For more information on location see the *Guidelines*, Placement section**.**

3.   Traffic-Control Devices. A PCMS may be used as a supplement, but it should not be used as a substitute to the proper use of other traffic control devices.

4.   Flashing-Arrow Sign. A PCMS should not be used as an alternative to a flashing-arrow sign. However, a PCMS may be used to simulate an arrow display in the message.

C. **Plans Requirements**

If a PCMS is required, the following information will be shown on the plans.

1.   Approximate Location. Unless there are specific reasons otherwise, each PCMS is to be located as shown in the *Guidelines*, Tables 1 and 2.

2.   Message Content. Each message shall be selected from the standard messages shown in the *Guidelines*, Table 7, or developed as non-standard, as described in the *Guidelines*, Section V. The district Traffic Office or the Traffic Management Center can be consulted for assistance with message development.

        Indiana Design Manual Figure 83-2E, Programming Information for Portable Changeable Message Sign, attached herewith, and on the editable-documents website, http://www.in.gov/dot/div/contracts/design/dmforms/index.html, shall be completed and included in the Contract Information book for each non-standard message on each PCMS.

A pay item for portable changeable message sign and the appropriate quantity should be included in the estimate of quantities and cost estimate.

Recurring Special Provision 801-C-229 should be called for. It is attached herewith.

D. **TMC Control of PCMS Operation**

As part of the Traffic Management Plan for q project in an Advanced Traffic Management System (ATMS) area, the designer shall consult with the district Construction Office and the appropriate Traffic Management Center to determine whether TMC control of the PCMS is desired. The ATMS areas are as follows.

1.   Indianapolis and Southern Indiana, Indianapolis TMC
        I-64, mile 118 to 124
        I-65, mile 0 to 9
        I-65, mile 86 to 149

I-69, mile 0 to 29
I-70, mile 55 to 106
I-74, mile 66 to 73
I-74, mile 94 to 101
I-265, mile 0 to 9
I-465, mile 0 to mile 53
I-865, mile 0 to mile 5

2.   <u>Northwest Indiana, Gary TMC</u>
I-65, mile 236 to 262
I-80/94, mile 0 to 16
I-94, mile 16 to 46
SR 912, mile 6 to 10

If the PCMS will be TMC controlled, the Aries Field Processor unique special provision should be included in the contract set. This unique provision should be obtained from the ITS Technology Deployment Office upon agreement that the TMC will control messaging.

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